

3.1 Alternatives to the Project

This chapter summarizes the various alternatives considered during preparation of the proposed Transportation 2030 Plan. Key features of each alternative are presented, and potential impacts are discussed and compared to the proposed Transportation 2030 Plan.

The CEQA Guidelines require EIRs to consider a reasonable range of alternatives to a proposed project or program. The range of alternatives shall include those that “would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project” (CEQA Guidelines, Section 15126.6(a)). “Feasible” means that the alternatives “are capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors” (CEQA Guidelines, Section 15364). The alternatives may result in new impacts that do not result from the Proposed Project. The EIR need not analyze these alternatives at the same level of detail that it analyzes the project itself. The CEQA Guidelines require only that the EIR analyze the comparative merits of the alternatives. Also, the Guidelines permit analysis of alternatives at a less detailed level for program EIRs, compared to project EIRs. Quantified information on the alternatives is presented where available; however, in some cases only partial quantification can be provided because of data or analytical limitations.

Finally, the CEQA Guidelines require each EIR to identify the environmentally superior alternative among the alternatives analyzed. If the No Project alternative is the environmentally superior alternative, the EIR must select another from among the alternatives analyzed.

ALTERNATIVES SCREENING

Section 15126.6 of the CEQA Guidelines outlines the range of alternatives that the EIR should analyze. All EIRs must assess the “No Project” alternative. This alternative represents the scenario of not adopting the Transportation 2030 Plan and continuing with the current plan through the year 2030. The other alternatives depend on the type and setting of the project. The range of alternatives is determined by the “rule of reason.” That is, the EIR needs to analyze only those alternatives that will help decision-makers make reasoned choices. The EIR should also focus on alternatives that reduce or eliminate the identified impacts of the proposed project, even if those alternatives would impede to some degree the attainment of the project objectives or would be more costly. If the alternatives themselves would have significant environmental impacts, the EIR must identify them.

MTC generated a preliminary range of project alternatives for consideration in the EIR, and included them in the Notice of Preparation (NOP) for public comments (see Appendix A). These preliminary alternatives—the No Project, Financially Constrained A, Financially Constrained B, and New Concepts—were derived to attain most of the Transportation 2030 Plan goals and potentially lessen the environment effects in comparison to the Transportation 2030 Plan (Proposed Project). MTC discussed these preliminary alternatives with the Bay Area Partnership

and its Technical Advisory Committee as well as MTC's advisory committees as part of the EIR scoping process.

MTC evaluated the comments about the alternatives offered in letters in response to the NOP. The commenters suggested that MTC perform a system-wide analysis by aggregating individual projects in the I-880 corridor to evaluate impacts on neighboring cities; refer to lifeline access in the financially constrained alternatives; evaluate the effects of fully funding the transit capital replacement shortfall compared to a proposal to fund a lesser portion of the transit capital shortfall; produce a different mix of investments if MTC were to institute criteria based on transit ridership and density; and evaluate the environmental effects of not including the Bay Area Partnership's proposed principles for allocating federal discretionary funds over the next few years in light of the state financial crisis. MTC deemed the suggestion to develop an investment plan based on transit ridership and density criteria to be infeasible because such a plan would only minimally address all the objectives that the Transportation 2030 Plan (the Proposed Project) has laid out and seeks to achieve. In addition, MTC also considered the suggestion to evaluate an alternative based on short-term funding allocation principles to be infeasible because it would fail to address already identified long term transportation needs in the Bay Area and some short term funding issues can be addressed with new revenues contained in the Proposed Project. However, MTC agreed with comments pertaining to the system-wide analysis, lifeline access, and differential in funding for the transit capital replacement shortfall, and the alternatives selected for this EIR analysis reflect these suggestions.

ALTERNATIVES ANALYZED IN THIS EIR

In addition to the Proposed Project, this EIR analyzes five alternatives: No Project, Financially Constrained Transportation 2030 Plan, Financially Constrained Transportation 2030 Plan Plus Sales Tax, Financially Constrained Transportation 2030 Plan Plus High-Occupancy/Toll (HOT) Network, and TRANSDEF Smart Growth alternative. These alternatives were selected to provide MTC decision makers with a reasonable range of choices and guidance about the future transportation system of the Bay Area. These alternatives are also intended to reflect distinct differences with respect to investment, mobility, and environmental effects.

The Transportation 2030 Plan (Proposed Project) and the alternatives evaluated in this EIR share some common features, including local streets and roads maintenance, transit operating and capital replacement maintenance, regional operation programs such as Freeway Service Patrol (FSP), call boxes, TransLink®, and 511, and incentive programs such as Transportation for Livable Communities (TLC) and Housing Incentive Program (HIP). By varying the overall composition of the highway, roadway, transit, and other projects evaluated, the Proposed Project and each alternative offer a different approach to carrying out the goals of the Transportation 2030 Plan. The TRANSDEF Smart Growth alternative goes further by making its own assumptions about future land use patterns (different from ABAG's adopted *Projections 2003*) and implementing other pricing strategies for the region. The descriptions of the alternatives are provided below. A complete listing of projects by alternative is provided in Appendix C. Table 3.1-1 shows the differences in the supply of transportation system capacity between alternatives.

NO PROJECT ALTERNATIVE (ALTERNATIVE 1)

The No Project alternative, required by CEQA, addresses the effects of not implementing the Transportation 2030 Plan. This alternative includes a set of highway, transit, local roadway, bicycle, and pedestrian projects that are in advanced planning stages and slated to go forward since they already have full funding commitments. These projects are: (1) included in the federally required Transportation Improvement Program (TIP), a three-year funding program of Bay Area project and programs, (2) not yet in the TIP but are fully funded county transportation sales projects authorized by voters in Alameda, Contra Costa, Santa Clara, San Mateo, and San Francisco counties, and (3) not yet in the TIP but fully funded through the Regional Measure 2 Toll Bridge Program that was approved by Bay Area voters in March 2003.

FINANCIALLY CONSTRAINED TRANSPORTATION 2030 PLAN ALTERNATIVE (ALTERNATIVE 2)

This Financially Constrained alternative consists of only the set of transportation projects and programs that would be funded through revenues projected to be reasonably available over the 25-year horizon of the Transportation 2030 Plan. It does not include projects identified in the vision element of the Transportation 2030 Plan (as previously described in Chapter 1.2). The key financial assumption governing the financially constrained element of the Plan is that existing sources of federal, state, or regional revenues are assumed to continue to 2030 with the exception of county transportation sales tax measures which, by law, must sunset. No new revenue sources that would require voter or legislative approval are assumed. This alternative is based on the Commission's regional priorities (i.e., addressing the maintenance and rehabilitation needs for local streets and roads and transit, continuing implementation of regional operations and customer service programs, funding clean air programs, and continuing the Transportation for Livable Communities (TLC) and Housing Incentive Program (HIP) programs, etc.). In addition, county level priorities developed by the individual county Congestion Management Agencies (CMAs) in consultation with their local agencies and transit operators are also included. The county priorities have been reviewed with the public and adopted by the CMAs' governing boards.

FINANCIALLY CONSTRAINED TRANSPORTATION 2030 PLAN PLUS SALES TAX ALTERNATIVE (ALTERNATIVE 3)

Five Bay Area counties—San Mateo, Contra Costa, Marin, Solano and Sonoma counties—will seek voter approval of new or reauthorized county transportation sales tax measures during the November 2004 elections. In this alternative, the Financially Constrained alternative will be expanded to include these potential sales-tax funded transportation projects and programs, which have been defined through the respective county planning and public involvement processes. Some common goals shared by the various county transportation sales tax plans are to keep the existing transportation system well-maintained; reduce and manage congestion on local roadways and highways; and support the use of transit, carpools, bicycling, and walking. Should these measures pass, the subset of transportation projects that become fully funded as a result of the new sales tax revenues will become part of the financially constrained element of the Transportation 2030 Plan when it is adopted in early 2005.

FINANCIALLY CONSTRAINED TRANSPORTATION 2030 PLAN PLUS HIGH-OCCUPANCY/TOLL (HOT) NETWORK ALTERNATIVE (ALTERNATIVE 4)

Building upon the investments considered in the Financially Constrained alternative, this alternative proposes to implement a toll pricing strategy to complete the regional HOV network and improve system efficiency. In this alternative, the Bay Area's existing High-Occupancy-Vehicle (HOV) lane system of 300 freeway lane miles, which saves time for vehicles with two or more occupants, would be converted to HOT lanes. Carpools, vanpools, and transit vehicles would continue to have free passage in the HOT lanes, but other motorists would pay a fee to use them. Vehicle occupancy rates for carpools/vanpools were increased to 3+ persons on all HOV lanes to create capacity for the new HOT lanes. The revenues generated by motorists who pay to use the lanes would be used to finance construction and operation of new HOV/HOT lanes where gaps exist in the HOV network, and to operate additional express bus and rideshare services for other corridor travelers. MTC would need federal and state legislative permission to implement the comprehensive HOT network envisioned in this alternative. The HOT network would consist of 800 miles of HOT lanes on Bay Area freeways, which is an additional 500 freeway lane miles over existing conditions (2000).

TRANSPORTATION SOLUTIONS DEFENSE AND EDUCATION FUND (TRANSDEF) SMART GROWTH ALTERNATIVE (ALTERNATIVE 5)

This alternative is supplied by TRANSDEF, a transportation advocacy organization, according to the Settlement Agreement and Release entered into by TRANSDEF, Citizens for Better Environment (CBE), Bay Area Air Quality Management District, and MTC in March 2004. This alternative includes a different set of land use assumptions for the region than in the other alternatives, by directing more future residential development in the Bay Area into transit supportive corridors, thus enhancing opportunities to use transit, bike and walk to various destinations. The alternative also includes new transportation pricing concepts affecting transit and road users, and aimed at encouraging travel on the region's bus and rail transit systems. The alternative minimizes expansion of the highway system while adding a broader network of Rapid Bus Transit (RBT) routes, expanding rail with equipment that uses conventional gauge rail tracks, and assuming implementation of a High Speed Rail network between Northern and Southern California via the Altamont Pass. Its purpose is to test the effectiveness of a planning strategy of accommodating regional growth by maximizing new residents' use of transportation modes other than single-occupant auto by limiting roadway capacity expansion and directing more potential growth into infill and transit-supportive areas in certain counties, avoiding greenfield development in other counties, and implementing pricing strategies to make driving more expensive and transit more attractive.

The underlying land use assumptions for the Proposed Project and all the financially constrained alternatives are ABAG's *Projections 2003*, which represent the outcome of the Bay Area region's recent regional smart growth planning project (called "Smart Growth Project"). These projections assume that the Bay Area will provide more housing opportunities near transit and also accommodate a larger share of future Bay Area workers within the nine Bay Area counties. In contrast, the TRANSDEF Smart Growth alternative uses its own set of land use assumptions patterned after the Network of Neighborhoods alternative, one of three conceptual land use patterns initially considered in the Smart Growth Project. This alternative has the same number

of residents and employees in the Bay Area as *Projections 2003*, but reduces the total residential land use uses in outlying rural and suburban areas while increasing residential construction in the urban core. In addition, TRANSDEF increases the net residential densities (i.e., number of households per residential acre) compared to *Projections 2003*. This type of development pattern would result in more conversion of existing low-intensity uses along arterial streets into mixed use commercial and housing as well as greater production of housing types such as apartments, condominiums and townhouses.

Whereas the other alternatives assume that existing transportation costs will remain the same, TRANSDEF proposes several pricing strategies to discourage travel in single occupant autos while increasing the attractiveness of using transit, biking, or walking: 1) a \$2.00/day parking charge at several high-demand BART stations, 2) a \$5.00/day parking charge at all employment sites (this charge is used as a surrogate for an employer provided parking-cash out program whereby employees would receive cash or free transit passes in an amount equivalent to what an employer would normally spend on employee parking), and 3) a 20 percent reduction in transit fares (this fare reduction is used as a surrogate for a residential Ecopass system for new residential developments whereby residents would pay for monthly transit passes through their rent or condominium fees). The alternative also would institute a regionwide free transfer policy for riders using multiple transit systems. In addition, widespread ramp metering is assumed in this alternative.

The TRANSDEF Smart Growth alternative also includes a markedly different set of transportation projects and programs than the other alternatives, and does not assume that fully funded projects will be implemented if they are not currently under contract. A total of 261 projects from the Financially Constrained Plus Sales Tax alternative were not included in this alternative, many of which are roadway projects. Roadway projects that were eliminated range from major interchange improvements such as the I-80/I-680/I-780 interchange improvements in Solano County; highway widenings such as Caldecott Tunnel fourth bore and Route 4 widening to 8 lanes with HOV lanes from Loveridge Road to Somersville Road in eastern Contra Costa County; and HOV projects such as the I-680 northbound HOV lane from Route 237 to Stoneridge Drive in Alameda County. In addition, BART extensions to Warm Springs and San Jose/Santa Clara were not included; and new transit services such as a TRANSDEF-defined regionwide Rapid Bus Transit (BRT) system, Diesel Multiple Unit (DMU) trains on conventional rail tracks, and upgraded Caltrain network (including electrification) were added. This alternative also assumes voter approval of a High Speed Rail system over the Altamont Pass serving San Francisco, Millbrae, Redwood City, Newark, Fremont, San Jose, Milpitas, and Livermore.

Overall, the TRANSDEF alternative would require a new approach to local land use planning absent regulatory power to require such changes at the local level. Several TRANSDEF pricing initiatives would require new authority. TRANSDEF believes MTC has authority to condition certain federal funds to local jurisdictions, although the amount of funds that would be conditioned are only a small fraction of the total transportation funding that is considered in the Transportation 2030 Plan. The ability to fund the operation and rehabilitation of the expanded transit network in this alternative has not been fully analyzed from a financial perspective. A number of transportation projects that were eliminated were approved by local voters, and would require counties to place new measures on a local ballot to shift funding over to new projects in

the TRANSDEF alternative. (See Appendix D for additional information on the TRANSDEF Smart Growth alternative).

COMPARATIVE IMPACT ANALYSIS

MTC may adopt any of the alternatives included in this EIR. The primary differences between the Proposed Project and the alternatives are the assumptions on future land use development and distribution, strategies affecting the price of using the Bay Area's transportation system, and assumptions concerning the amount of funding available for future transportation improvements. The Proposed Project and the three financially constrained alternatives are based on the land use projections adopted by ABAG (*Projections 2003*). The TRANSDEF Smart Growth alternative has its own set of land use assumptions patterned after the Network of Neighborhoods alternative from ABAG's Smart Growth Project. These land use assumptions are those of TRANSDEF and have not been reviewed with local governments or the public, other than through the Smart Growth process.

The Proposed Project and the financially constrained alternatives share the same pricing assumptions such as parking costs and transit fares. However, the TRANSDEF Smart Growth alternative proposes several new pricing policies, including free transfers between all major transit operators, a \$2.00/day parking fee at several high-demand BART stations, a 20 percent reduction in transit fares (as a surrogate for a mandatory residential transit eco-pass purchase program for occupants of new housing developments), and a \$5.00/day parking fee for commuters (as a surrogate for a regional employer parking cash out program).

The mix of roadway, highway, and transit investments assumed in the transportation network also varies amongst the Proposed Project and the alternatives depending on the financial assumptions. The Financially Constrained alternative assumes \$113 billion in revenues will be available over the next 25 years. In addition to the \$113 billion in revenues, the Financially Constrained Plus Sales Tax assumes an additional \$5.7 billion in new sales tax revenues, while the Financially Constrained Plus HOT assumes an additional \$3 billion of toll revenues. The TRANSDEF alternative includes revenues from new pricing strategies that TRANSDEF believes can be invoked through existing agency authority and powers, but which do not actually exist today. Because of the financial constraints, the transportation networks for these alternatives are far less extensive than the Proposed Project.

Unlike the alternatives, the Proposed Project is not financially constrained; it includes new revenue sources that MTC reasonably believes could be implemented through anticipated future voter or legislative action over the next 5 to 10 years. Although federal planning regulations require that MTC identify a set of projects that can be delivered based on reasonably available funding, these requirements do not preclude MTC from adopting a plan that includes additional projects that could be funded with new revenues. Because of its assumptions about the potential for new transportation funding, the Proposed Project has the most extensive transportation network, which includes both HOT lane projects and potential new county sales tax measure projects.

ANALYSIS OF THE TRANSDEF SMART GROWTH ALTERNATIVE ASSUMPTIONS

The TRANSDEF Smart Growth alternative has significantly different land use and pricing assumptions than the Proposed Project and the financially constrained alternatives. To provide additional information on the impact of these assumptions on certain transportation outcomes, MTC conducted an analysis to isolate the impacts of the TRANSDEF Smart Growth alternative's land use and pricing assumptions. Comparing land use assumptions (see Table 3.1-1), the TRANSDEF Smart Growth alternative results in 2,397,700 transit trips using TRANSDEF's land use assumptions, but drops to 2,148,000 transit trips using ABAG's *Projections 2003*¹. Thus, the difference of 249,000 transit trips is due to TRANSDEF's land use assumptions, which place more people in the urban core where the transit system is most extensive. To determine the effect of TRANSDEF's pricing strategies and proposed highway and transit projects on transit ridership, ABAG's land use assumptions were used for the TRANSDEF alternative, and then the TRANSDEF results were compared to the No Project alternative. This showed that, holding land use constant, TRANSDEF increased transit trips by 421,000 over the No Project alternative². Thus, MTC estimates that TRANSDEF's land use assumptions are responsible for about 37 percent of the transit ridership increase and the remaining 63 percent is due to pricing and transportation network changes.

In addition, MTC estimated the average trip costs for drive alone work trips and transit trips in the No Project alternative and TRANSDEF alternative (average trip costs represent the full set of out-of-pocket costs, including gasoline operating costs, non-gasoline operating costs, parking charges and transit fares). For drive alone work trips, MTC estimates the average trip cost to be \$1.30 per trip for the No Project alternative and \$1.50 per trip for the TRANSDEF Smart Growth alternative. Thus, the TRANSDEF alternative increases drive alone work trip costs by 15.4 percent. However, for transit trips (transit trips include both work and non work trip purposes), MTC estimates that the average transit trip cost is \$1.70 per trip for the No Project alternative and \$1.34 per trip for the TRANSDEF Smart Growth alternative. Thus, the TRANSDEF alternative lowers the average per trip cost for transit users by 21.2 percent. From these calculations, it appears that the benefits of the TRANSDEF land use and pricing assumptions are directed more heavily towards transit users, while drive alone auto users would experience higher travel costs.

It should also be noted that the demographic data assumptions in the TRANSDEF Smart Growth alternative produces different regional auto ownership rates compared to the Proposed Project and the other alternatives³. This difference is important because auto ownership rates affect trip generation rates and mode choice. Typically, lower auto ownership rates result in lower trip generation rates and higher use of non-auto modes. In addition, multi-vehicle households will likely make more vehicle trips but less transit trips than zero- and single-vehicle households who do not own a vehicle, compete for use of the household vehicle, or use transit (or other modes) because of the lack of access to a vehicle. For this EIR analysis, the regional auto ownership rates for the Proposed Project and Financially Constrained alternatives are the same. As shown in

¹ Numbers included in the narrative have been rounded.

² Numbers included in the narrative have been rounded.

³ Inputs into MTC's auto ownership model include density, income, household size, structure types, workers in households, and relative transit-to-highway accessibility. The regional values for income and household size are the same for the Proposed Project and TRANSDEF Smart Growth alternative.

Table 3.1-2, the TRANSDEF Smart Growth alternative, however, produces a higher number of zero-vehicle households (36.6 percent increase) but lower number of multi-vehicle households (9 percent decrease) compared to the Proposed Project. Overall, the TRANSDEF Smart Growth alternative produces a net decrease of 6.5 percent for the average number of vehicles per household compared to the Proposed Project. This would be expected because the TRANSDEF Smart Growth alternative increases densities and brings more households in San Francisco, resulting in higher predilection for lower vehicles per households. Therefore, the TRANSDEF Smart Growth alternative yields lower auto ownership rates, which in turn, yields lower trip generation rates and a different mode choice (i.e., lower vehicle trips) compared to the Proposed Project and the other alternatives.

Table 3.1-1: Bay Area Regional Trips by Trip Purpose and Travel Mode (2000 to 2030)

	2000	2030 Project	2030 No Project	2030 Financially Constrained	2030 Financially Constrained + HOT	2030 Financially Constrained + Sales Tax	2030 TRANSDF Smart Growth Alternative	2030 TRANSDEF Smart Growth Alternative (Projections 2003) ¹
Auto	17,597,300	23,583,600	23,719,700	23,705,600	23,687,000	23,707,500	22,615,000	23,172,300
Transit	1,175,600	1,869,700	1,727,000	1,745,500	1,755,000	1,742,600	2,397,300	2,148,400
Bicycle	310,600	403,100	405,200	403,800	407,400	404,300	433,000	417,500
Walk	1,950,400	2,636,400	2,640,900	2,640,000	2,643,500	2,639,400	2,829,200	2,754,600
Total	21,033,800	28,492,900	28,492,900	28,492,900	28,492,900	28,492,900	28,274,500	28,492,900
Truck Trips	3,404,400	4,654,500	4,654,500	4,654,500	4,654,500	4,647,800	4,647,800	4,647,800
Interregional Vehicle Trips ²	572,200	1,042,000	1,042,000	1,042,000	1,042,000	1,042,000	1,042,000	1,042,000
Intraregional Vehicle Trips ³	13,121,500	17,772,800	17,868,100	17,852,100	17,842,300	17,861,500	16,975,000	17,481,100
Total Vehicle Trips	17,098,100	23,469,400	23,564,600	23,548,700	23,538,800	23,551,400	22,664,900	23,170,900
Non-Work-Auto	13,153,400	17,382,100	17,433,900	17,425,500	17,419,300	17,424,000	16,707,700	17,019,800
Non-Work-Transit	603,400	864,300	810,800	819,100	819,400	820,900	1,273,900	1,103,900
Non-Work-Bicycle	250,300	301,000	301,500	300,600	303,300	300,900	307,500	311,900
Non-Work-Walk	1,778,400	2,389,900	2,392,100	2,392,100	2,395,200	2,391,500	2,522,200	2,501,600
Non-Work-Total	15,786,500	20,937,300	20,937,300	20,937,300	20,937,300	20,937,300	20,811,400	20,937,300

¹TRANSDEF Smart Growth alternative using ABAG's Projections 2003

²Interregional trips mean vehicle trips that start within the region and end outside of the region, or vice-versa

³Intraregional trips mean vehicle trips that start within the region and end within the region

Source: Metropolitan Transportation Commission, 2004

Table 3.1-2: Summary of Regional Household Auto Ownership & Workers in Household Forecasts (2000 to 2030)

	2000	2030 Project	2030 TRANSDEF Smart Growth	Numerical and % Difference of 2030 TRANSDEF Smart Growth from 2030 Project
Non-Working Households	520,700	692,300	731,700	39,400 57%
Single-Worker Households	915,300	1,206,100	1,200,800	-5,400 -0.4%
Multi-Worker Households	1,030,000	1,288,100	1,254,200	-34,000 -2.6%
Total Households	2,466,000	3,186,600	3,186,600	0 0.0%
Zero-Vehicle Households	247,200	311,400	425,400	114,100 36.6%
Single-Vehicle Households	816,200	967,200	1,025,000	57,800 6.0%
Multi-Vehicle Households	1,402,500	1,908,000	1,736,200	-171,900 -9.0%
Total Household Vehicles	4,325,000	5,746,700	5,371,100	-375,600 -6.5%
Average Vehicles/Household	1.75	1.80	1.69	-0.12 -6.5%
Share, Zero-Vehicle Households	10.0%	9.8%	13.4%	
Share, Single-Vehicle Households	33.1%	30.4%	32.2%	
Share, Multi-Vehicle Households	56.9%	59.9%	54.5%	

Source: Metropolitan Transportation Commission, 2004